

Application No. 09/714,332
Attorney Docket No. 10236
Suppl. Amdmt. dated January 16, 2004
Reply to Advisory Action of November 14, 2003

Amendments to the Claims:

The following listing of claims replaces all prior versions of claims in this Application:

Listing of Claims:

Claims 1 – 25. (Cancelled)

Claim 26 (currently amended): A coextruded heat-sealable film structure, comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer; and

(d) wherein the heat-sealable film structure has a force over forming collar value of less than 20 pounds and a hot slip value of less than 20 at 290° C;

(e) wherein the core layer has a polymeric matrix selected from the group consisting of a ethylene propylene copolymer, propylene butylene copolymer, and a high density polyethylene; and

(f) wherein the core layer comprises a cavitating agent selected from the group consisting of polybutylene terephthalate, calcium carbonate, and blends thereof.

Claims 27 – 29 (Cancelled)

Claim 30 (currently amended): A laminate film structure comprising a first film laminated to a second film, wherein the first film is a heat-sealable film structure comprising:

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(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer;

(d) wherein the heat-sealable film structure has a force over forming collar value of less 20 pounds and a hot slip value of less than 20 at 290° C; and

(e) wherein the second film is comprised of the same structure as the first film.

Claim 31 (currently amended): A laminate film structure comprising a first film laminated to a second film, wherein the first film is a heat-sealable film structure comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer;

(d) wherein the heat-sealable film structure has a force over forming collar value of less 20 pounds and a hot slip value of less than 20 at 290° C; and

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(e) wherein the core layer has a polymeric matrix selected from the group consisting of a propylene homopolymer, a propylene copolymer, and a polyethylene.

Claim 32 (currently amended): A laminate film structure comprising a first film laminated to a second film, wherein the first film is a heat-sealable film structure comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer;

(d) wherein the heat-sealable film structure has a force over forming collar value of less 20 pounds and a hot slip value of less than 20 at 290° C; and

(e) wherein the antiblocking agent is a particulate antiblocking agent having an average particle size of from about 1 to about 5 μm .

Claim 33 (currently amended): A laminate film structure comprising a first film laminated to a second film, wherein the first film is a heat-sealable film structure comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater

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than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer;

(d) wherein the heat-sealable film structure has a force over forming collar value of less 20 pounds and a hot slip value of less than 20 at 290° C; and

(e) wherein the core layer has a polymeric matrix selected from the group consisting of an ethylene propylene copolymer, propylene butylene copolymer, and a high density polyethylene.

Claim 34 (previously presented): The laminate film structure of claim 31 wherein the silicone gum has a viscosity in the range of 10 to 20 million centistokes.

Claim 35 (previously presented): The laminate film structure of claim 31 wherein the core layer further comprises an additive selected from the group consisting of a natural hydrocarbon additive, a synthetic hydrocarbon additive, a cavitating agent, an antistatic agent, and mixtures thereof.

Claim 36 (previously presented): The laminate film structure of claim 31 wherein the functional layer further comprises at least one antiblock additive.

Claim 37 (previously presented): The laminate film structure of claim 31 wherein the surface of the functional layer is flame treated or corona treated and the surface of the heat-sealable layer is untreated.

Claim 38 (previously presented): The laminate film structure of claim 31 wherein the thermoplastic polymer of the heat-sealable layer is selected from the group consisting of an ethylene-propylene random copolymer, a propylene-butylene random copolymer, an ethylene-propylene-butylene terpolymer, a linear low density polyethylene, a low density polyethylene, a metallocene-catalyzed polyethylene, an ethylene vinyl acetate, an ethylene-methyl acrylate, an

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ionomer, and blends thereof and the functional layer has a polymeric matrix selected from the group consisting of a propylene polymer, an ethylene-propylene block copolymer, a high density polyethylene, an ethylene vinyl alcohol copolymer, an ethylene-propylene random copolymer, a propylene-butylene copolymer, an ethylene-propylene-butylene terpolymer, a medium density polyethylene, a linear low density polyethylene, an ethylene vinyl acetate, an ethylene-methyl acrylate, and blends thereof.

Claim 39 (previously presented): The laminate film structure of claim 33 wherein the thermoplastic polymer of the heat-sealable layer is selected from the group consisting of a propylene-butylene random copolymer, a metallocene catalyzed polyethylene, an ethylene vinyl acetate, and an ethylene-methyl acrylate, an ionomer, and blends thereof.

Claim 40 (previously presented): The laminate film structure of claim 39 wherein the functional layer comprises a material selected from the group consisting of an ethylene vinyl alcohol copolymer, a propylene-butylene copolymer, an ethylene vinyl acetate, an ethylene-methyl acrylate, and blends thereof.

Claim 41 (previously presented): The laminate film structure of claim 39 wherein the antiblocking agent is selected from the group consisting of cross linked silicone resin powder, methyl methacrylate resin powder, a spherical silica powder, and blends thereof.

Claim 42 (previously amended): The laminate film structure of claim 33 wherein the core layer comprises a cavitating agent selected from the group consisting of polybutylene terephthalate, calcium carbonate, and blends thereof.

Claim 43 (previously presented): The laminate film structure of claim 33 wherein the core layer is from about 5 to about 50 μm thick, the functional layer is from about 0.25 to about 3.0 μm thick, and the heat-sealable layer is from about 0.5 to about 7 μm thick.

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Claim 44 (previously presented): The laminate film structure of claim 33 wherein the core layer is free of an antistatic agent and a fatty acid amide slip additive.

Claim 45 (currently amended): A coextruded heat-sealable film structure, comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer; and

(d) wherein the heat-sealable film structure has a force over forming collar value of less than 20 pounds and a hot slip value of less than 20 at 290° C;

(e) wherein the core layer has a polymeric matrix selected from the group consisting of a ethylene propylene copolymer, propylene butylene copolymer, and a high density polyethylene; and

(f) wherein the heat-sealable layer is comprised of a material selected from the group consisting of ethylene vinyl acetate, ethylene-methyl acrylate, an ionomer, and blends thereof.

Claim 46 (currently amended): A coextruded heat-sealable film structure, comprising:

(a) a core layer comprising a thermoplastic polymer, the core layer having a first side and a second side;

(b) a functional layer on the first side of the core layer, wherein the functional layer is selected from the group consisting of a laminating layer, a printable layer, a laminating and a printable layer, and a sealable layer;

(c) a heat-sealable layer on the second side of the core layer comprising (i) a thermoplastic polymer and (ii) a slip system comprising a silicone gum having a viscosity greater

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than one million centistokes present in amount from about 0.2 wt. % to about 2.0 wt. % of the heat-sealable layer and at least one antiblocking agent present in an amount from about 0.05 wt. % to about 0.5 wt. % of the heat-sealable layer; and

(d) wherein the heat-sealable film structure has a force over forming collar value of less than 20 pounds and a hot slip value of less than 20 at 290° C;

(e) wherein the core layer has a polymeric matrix selected from the group consisting of a ethylene propylene copolymer, propylene butylene copolymer, and a high density polyethylene; and

(f) wherein the functional layer is comprised of a material selected from the group consisting of ethylene vinyl acetate, ethylene-methyl acrylate, ethylene vinyl alcohol copolymer, propylene-butylene copolymer, and blends thereof.

Claim 47 (previously presented): The coextruded heat-sealable film structure of claim 46 wherein the heat-sealable layer is comprised of a material selected from the group consisting of ethylene vinyl acetate, ethylene-methyl acrylate, an ionomer, and blends thereof.